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## CROATIAN HIGHER EDUCATION ON COMMUNICATIONAL PATH OF APPROACHING EUROPEAN HIGHER EDUCATION SYSTEM

## HRVATSKO VISOKO OBRAZOVANJE NA KOMUNIKACIJSKOM PUTU PRIBLIŽAVANJA EUROPSKOM OBRAZOVNOM SUSTAVU

*Tea Baldigara**Faculty of Tourism and Hospitality Management, University of Rijeka, Opatija, Croatia**Fakultet za menadžment u turizmu i ugostiteljstvu, Sveučilište u Rijeci, Opatija, Hrvatska**Abstract*

The signing of the Bologna Declaration and Croatia's imminent accession to the European Union set up new challenges for the Croatian higher educational system, in which reforms were needed, in the endeavour of creating a successful and international competitive knowledge-based society. Following the main goal and the specified objectives of the Bologna Declaration, Croatia initiated a series of reforms of its higher educational system. The higher education system restructuring and adapting process was aimed at creating a new coherent educational framework suitable for achieving the European educational standards throughout the embracement of the European Higher Education three studying cycles, the so called Bachelor-Master-Doctor system, the adoption of the ECTS credit system, the introduction of a new internationally recognizable and comparable degree system, the implementation of a standardized quality assurance system, the improvement of the quality of the academic programmes and their modernization, and the enablement of academic staff and students mobility. In the century of knowledge we live, higher education is the major initiator of positive changes and development. Over the coming period, Croatian higher education system, should successfully meet new social and economic requirements and challenges of a knowledge-based society. The pursuit of European educational standards should be a priority of all future Croatian developing strategies and a continuous process of seeking educational excellence as the fundament of further successful euro integration of the country. Based on those premises the paper aims to introduce and analyse the current status of the Croatian higher education system on the eve of accession to the European Union and offers an insight into the so far carried out and realized reforms and changes and achieved goals.

*Sažetak*

Potpisivanje Bolonjske Deklaracije te predstojeći ulazak Republike Hrvatske u Europsku Uniju, postavili su velike izazove pred hrvatski sustav visokog obrazovanja. Temeljeći se na osnovnim načelima i ciljevima Bolonjske Deklaracije, Republika Hrvatska je u posljednjem desetljeću krenula putem restrukturiranja i prilagođavanja sustava visokog obrazovanja. Proces reformi rezultirao je novim koherentnim i europskim obrazovnim okvirom pogodnim za postizanje europskih obrazovnih standarda kroz prihvaćanje studijskih ciklusa temeljenih na preddiplomskoj, diplomskoj i poslijediplomskoj razini, uvođenje ECTS bodovnog sustava te dopunske isprave o studiju, uvođenje novog međunarodno priznatog sustava diplomi, primjenu sustava osiguranja kvalitete, razvoj nacionalnih kvalifikacijskih okvira kompatibilnih s usvojenim kvalifikacijskim okvirom za europsko područje visokog obrazovanja, poboljšanje i inoviranje nastavnih programa, te promicanje mobilnosti studenata, profesora, znanstvenika i administrativnih djelatnika kao i promicanje sustava cjeloživotnog učenja. U suvremenom društvu, društvu znanja, obrazovanje predstavlja osnovni čimbenik razvoja i pozitivnih promjena. Hrvatsko visoko obrazovanje, kao i njegovo dalje prilagođavanje i poboljšanje, mora postati prioritet dugoročnih razvojnih strategija te stalni proces iznalaženja obrazovne izvrsnosti. Temeljeći se na danim pretpostavkama, u radu se analizira sadašnje stanje i obilježja hrvatskog visokog obrazovnog sustava u svjetlu njegova prilagođavanja zahtjevima Bolonjskog procesa kao preduvjeta međunarodne konkurentnosti i uspješnog sudjelovanja u Europskom sustavu visokog obrazovanja.

## INTRODUCTION

The signing of the Bologna Declaration, the effort of creating the common European Higher Education Area (EHEA) and the internalisation of higher education involved profound changes in European higher education systems in the last two decades. Evidence of the great impact of the Bologna Process is its involving 46 European countries, 5600 tertiary institutions, and 31 million students /1/. Based on this great impact of the Bologna Process reforms, the paper examines the challenges, the changes and the progress made by Croatia in the endeavour of entering the European Higher Education Area.

The Croatia's accession to the Bologna Process and the imminent accession to the European Union heightened the necessity for more detailed and systematic reforms of Croatian higher education. By signing the Bologna Declaration in year 2001 and committing to the Bologna Process guiding principles and goals, Croatian higher education turned the corner at the beginning of the millennium and entered a period of great challenges in the endeavour to create a new educational framework. Serious reforms, as well as rethinking the entire Croatian higher education system architecture, were necessary in order to adapt the Croatian higher education to European standards. A considerable amount of literature, studies, discussions, assessments and reports illustrating the topicality and the importance of this issue has been published. Numerous authors have researched and investigated the issue, the relevance, the extent and the impact of the Bologna Process. This paper can be, therefore, considered as an author's attempt to investigate the impact of the Bologna Process reforms on the Croatia's higher education system. The findings in this paper are based on desk research using the Bologna Process related documentation. Prior to writing this paper a detailed consultation of the published material was carried out. A consistent amount of relevant information was collected from recent data published on the World Wide Web from official sites of international and national institutions, organisations, bodies, re-

searchers and authors. A list of references used in writing this study is given at the end of the paper.

## THE PREMISES OF THE BOLOGNA PROCESS

Officially, the Bologna Process started with the signing of the Bologna Declaration in 1999, a document largely inspired by the Sorbonne Declaration, as the main guiding document of the Bologna Process, by Ministers of Education from 29 European countries, committing themselves to harmonise the European Higher Education system. The specified operational objectives set out in the Bologna Declaration and the following Communiqués can be summarized in the following areas: adoption of a common Framework of readable and comparable degrees, introduction of undergraduate and postgraduate levels and curriculum reform, introducing the ECTS credit system, adoption of common and comparable quality assurance system, reform and the introduction of qualifications frameworks, recognition mobility and the stimulation of free mobility of students and teachers. These operational objectives have led to the achievement of the strategic objective of the Bologna Declaration, i.e. to create and establish the European Area of Higher Education.

In 1999, among the signatory countries of the Bologna Declaration were the then 15 EU Member States, and Iceland, Switzerland and Norway as the EFTA countries, and 11 EU candidate member states (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia). At the Prague Summit in 2001, there were 33 countries participating in the Bologna Process, together with Croatia, Cyprus, Liechtenstein and Turkey as new members. Two years later, at the Berlin Summit 7 new signatory countries were included in the Bologna Process, i.e. Andorra, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia (the FYROM), the Holy See, Montenegro, Russia and Serbia, so there were 40 countries involved in the creating of the European Higher Education Area.

**Table 1: Countries participating in the Bologna Process**

<i>Signatory countries</i>	Austria, Belgium <sup>1</sup> , Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK <sup>2</sup> .	
<i>Year of joining the Bologna Process</i>	<i>2001 Prague Summit</i>	Croatia, Cyprus, Liechtenstein, Turkey
	<i>2003 Berlin Summit</i>	Albania, Andorra, Bosnia and Herzegovina, The Holy See, Russia, Serbia, The Former Yugoslav Republic of Montenegro (the FYROM)
	<i>2005 Bergen Summit</i>	Armenia, Azerbaijan, Georgia, Moldova, Ukraine
	<i>2007 London Summit</i>	Montenegro <sup>3</sup>
	<i>2010 Wien/Budapest Summit</i>	Kazakhstan

Based on Education, Audiovisual and Culture Executive Agency, (2010) "Focus on Higher Education in Europe 2010: The impact of the Bologna Process (EACEA P9 Eurydice)", pp. 9-14., and The official Bologna Process website July 2007 - June 2010, [www.ond.vlaanderen.be/hogeronderwijs/bologna/](http://www.ond.vlaanderen.be/hogeronderwijs/bologna/).

At the Bergen Summit in 2005 there were 45 countries involved in the Bologna Process. In 2007 at the Fourth Ministerial Meeting in London, Montenegro has been accepted as a full member and in 2010 at the Wien/Budapest Summit last Ministerial Summit Kazakhstan entered the Bologna Process. The Bologna Process currently has 49 participating countries.

It has to be emphasized that it is a common misconception that the Bologna Process is exclusively

a European Union initiative. In fact, the Bologna Declaration was signed by 29 countries, out of which 11 was not member states of the European Union.

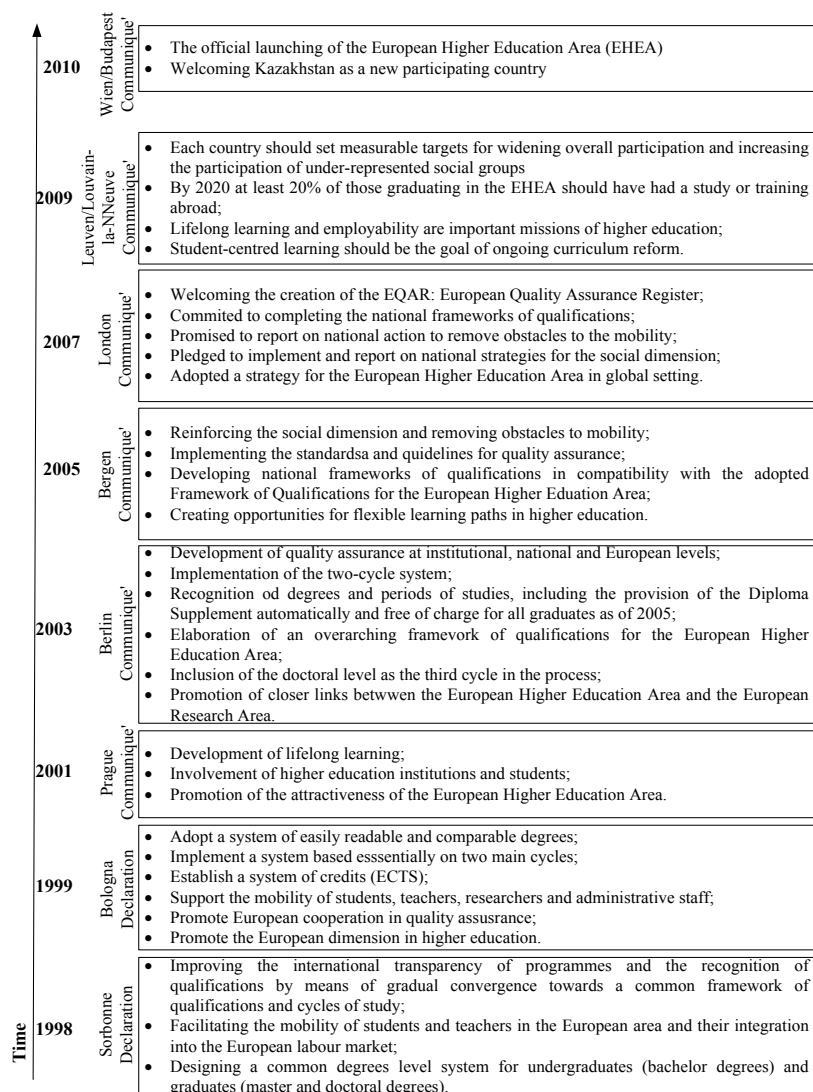
After signing the Bologna Declaration, six biennial ministerial meetings were organised, and held in different European cities. The following figure represents a chronological outline of the ministerial meetings, the respectively Communiqués and the most important policy decisions taken.

<sup>1</sup> Including the Flemish Community and the French Community

<sup>2</sup> Including UK Scotland and UK ENWI - England, Wales and Northern Ireland

<sup>3</sup> Montenegro has been participating in Bologna Process since 2003 Berlin Summit, but became a full member at the 2007 London Summit.

Figure 1: Timetable of the Bologna Process



Based on: Education, Audiovisual and Culture Executive Agency, (2010) "Focus on Higher Education in Europe 2010: The impact of the Bologna Process (EACEA P9 Eurydice)", pp. 9-14.

As stated in the Wien/Budapest declaration the next Ministerial Meeting to take stock of progress and to drive the Leuven/Louvain-la-Neuve agenda forward, will be hosted by Romania in Bucharest in year 2012. In 2001 at the Ministerial meeting in Prague it was decided to establish a Bologna Follow-Up Group (BFUG) responsible of monitoring the implementation of the objectives and the progress of the Bologna Process. In the meantime many countries organised the so-called Bologna seminars on various important topics regarding the understanding and the implementation of the Bologna Process.

### RETHINKING THE CROATIA'S HIGHER EDUCATION SYSTEM: THE CHALLENGING PATH OF THE BOLOGNA PROCESS

At the Berlin Ministerial Summit in year 2003, the Bologna Follow-Up Group started to undertake a stocktaking process of the progress in achieving the three major Bologna Process objectives: quality assurance, the two-cycle degree system and the recognition of degrees and study periods. As a result of this evaluating process the so called Stocktaking Reports were drawn up biennially and presented at the Ministerial Summits. An important source of information for the Stocktaking Reports were the single countries National Reports and the EURYDICE Questionnaire. Since 2003,

three Stocktaking Reports were prepared by the Stocktaking Working Group: the 2005 Bologna Process Stocktaking Report presented at the 2005 Ministerial Summit in Bergen, the 2007 Bologna Process Stocktaking Report presented at the 2007 Ministerial Summit in London, and the 2009 Bologna Process Stocktaking Report presented at the 2009 Ministerial Summit in the Leuven/Louvain-la-Neuve Summit. Since Croatia has been a full member of the Bologna Process since 2001 National Reports on Bologna reforms are available from 2009, 2007 and 2005.

The guiding ideas of the single Stocktaking Reports were the taking account of the progress made in the major objectives settled by the Bologna Declaration, to provide a useful benchmark progress measuring tool and future trends. At the

basis of the stocktaking activity was the reviewing of the three mentioned action lines and the evaluation and the elaboration of measuring criteria. Each selected criteria was further expanded on five benchmarks in order to measure the progress and its extent. For each of the three priority action lines: the quality assurance system, the two-cycle degree system and the recognition of degrees and study period system a set of criteria were worked out and elaborated. Afterward, the setting of benchmarks for each single priority action line criteria followed. The various criteria and indicators served as basis for the single countries scorecard fulfilling. The table below shows the 2005 Bologna Scorecard for Croatia integrated in the 2005 Bologna Stocktaking Report.

**Table 2: Croatia - 2005 Bologna Scorecard**

PRIORITY ACTION LINES AND INDICATORS	SCORE
<b>QUALITY ASSURANCE</b>	<b>2.67 ≈ 3</b>
1. Stage of development of quality assurance system	3
2. Level of participation of students	2
3. Key elements of evaluation systems	3
4. Level of international participation, co-operation and networking	2
<b>THE TWO-CYCLE DEGREE SYSTEM</b>	<b>3</b>
5. Stage of the implementation of two-cycle system	4
6. Level of participation in two-cycle system	2
7. Access from the first cycle to the second cycle	3
<b>RECOGNITION OF DEGREES AND STUDY PERIODS</b>	<b>4</b>
8. Stage of implementation of the Diploma Supplement	3
9. Ratification of the Lisbon Recognition Convention	5
10. Stage of implementation of ECTS	4
<b>TOTAL</b>	<b>3.22≈3</b>

Based on The 2005 Bologna Stocktaking Report and The 2005 Bologna Process National Report.

Two years later, the previously set 2005 scorecard indicators were used as a starting point in preparing the 2007 Stocktaking Report. In the 2007 Stocktaking Report some of the indicators from 2005

were changed, some of them amalgamated and finally some new one were added. The table below shows the 2007 Stocktaking results for Croatia.

**Table 3: Croatia – 2007 Bologna Scorecard**

PRIORITY ACTION LINES AND INDICATORS	SCORE
<b>DEGREE SYSTEM</b>	<b>3.67 ≈ 4</b>
1. Stage of implementation of the first and second cycle	3
2. Access to the next cycle	5
3. Implementation of national qualifications framework	3
<b>QUALITY ASSURANCE</b>	<b>4.25 ≈ 4</b>
4. National implementation of Standards and Guidelines for QA in the EHEA	4
5. Stage of development of external quality assurance system	4
6. Level of students participation	5
7. Level of international participation	4
<b>RECOGNITION OF DEGREES AND STUDY PERIODS</b>	<b>4.33≈4</b>
8. Stage of implementation of diploma supplement	3
9. National implementation of the principles of the Lisbon Recognition Convention	5

10. Stage of implementation of ECTS	5
<b>LIFELONG LEARNING</b>	<b>3</b>
11. Recognition of prior learning	3
<b>JOINT DEGREES</b>	<b>5</b>
12. Establishment and recognition of joint degrees	5
<b>TOTAL</b>	<b>4</b>

Based on The 2007 Bologna Stocktaking Report and The 2007 Bologna Process National Report.

For the 2009 Ministerial Meeting in Leuven/Louvain-la-Neuve the stocktaking process evolved and further changed, in the scorecard

indicators were made in preparing the 2009 Stocktaking Report. Some of the criteria were omitted and some new introduced as shown in the table below.

**Table 4: Croatia - 2009 Bologna Scorecard**

PRIORITY ACTION LINES AND INDICATORS	SCORE
<b>DEGREE SYSTEM</b>	<b>3.33≈3</b>
1. Stage of implementation of the first and second cycle	4
2. Access to the next cycle	3
3. Implementation of national qualifications framework	3
<b>QUALITY ASSURANCE, ESG<sup>1</sup></b>	<b>4.67≈5</b>
4. Stage of development of external quality assurance system	4
5. Level of students participation in quality assurance	5
6. Level of international participation in quality assurance	5
<b>RECOGNITION</b>	<b>4</b>
7. Stage of implementation of diploma supplement	3
8. National implementation of the principles of the Lisbon Recognition Convention	5
9. Stage of implementation of ECTS	5
10. Recognition of prior learning	3
<b>TOTAL</b>	<b>4</b>

Based on The 2009 Bologna Stocktaking Report and The 2009 Bologna Process National Report.

The final 2009 Stocktaking Report is an executive summary and a résumé of the achievements in pursuing the Bologna Declaration objectives and it gives an overall qualitative and quantitative analysis of the scorecard indicators. The Report gives also the summarized analysis of the

achievements of the single countries participating to the Bologna Process reforms. The following table shows the countries ranking according to the total average score of the made progress.

**Table 5: Stocktaking Scorecards 2009**

COUNTRY <sup>2</sup>	AVERAGE SCORE	COUNTRY	AVERAGE SCORE
1 UK Scotland	5	25 Hungary	4
2 Denmark	4.9	26 Spain	4
3 Ireland	4.8	27 Holy See	3.9
4 Sweden	4.8	28 Liechtenstein	3.9
5 Netherlands	4.7	29 Germany	3.8
6 Norway	4.7	30 Lithuania	3.8
7 Belgium Flemish	4.6	31 Montenegro	3.8
8 Finland	4.6	32 Serbia	3.8
9 Portugal	4.6	33 Turkey	3.8

<sup>1</sup> ESG – Standards and Guidelines for Quality Assurance in the European Higher Education Area

<sup>2</sup> At the Ministerial Summit in Wien/Budapest in 2010, Kazakhstan has been welcomed as a new participating country.

10	Romania	4.6	34	Armenia	3.7
11	Austria	4.3	35	Greece	3.7
12	Iceland	4.3	36	Slovenia	3.7
13	UK-EWNI	4.3	37	Cyprus	3.6
14	Belgium French	4.2	38	The FYROM	3.6
15	Estonia	4.2	39	Bosnia and Herzegovina	3.4
16	Georgia	4.2	40	Moldova	3.4
17	Latvia	4.2	41	Albania	3.3
18	Luxemburg	4.2	42	Italy	3.3
19	Poland	4.2	43	Malta	3.3
20	Bulgaria	4.1	44	Azerbaijan	3.2
21	Czech Republic	4.1	45	Ukraine	3.2
22	France	4.1	46	Russia	3
23	Switzerland	4.1	47	Slovakia	2.9
24	Croatia	4	48	Andorra	2.6

Based on The 2009 Bologna Stocktaking Report, p.120.

Summarizing the results becomes evident that the total overall average score of the Bologna priority action lines implementation is 3.97. UK Scotland is the only among 47 countries that has completely fulfilled all objectives and is on the top of the ranking list with score 5. Andorra is the country with the lowest score of 2.6. Andorra signed the Bologna Declaration in 2003 at the Berlin Summit together with Albania, Bosnia and Herzegovina, the Holy See, Russia, Serbia and Montenegro.

Analyzing the single priority action lines, the requirements regarding the national qualifications framework were obviously the most demanding

for the majority of the countries participating in the Bologna Process reforms and 9 countries did not fulfil this requirement and were scored 1.

As shown in Table 6, 31 countries have successfully completed the process of introducing the first, bachelor degree, and the second, master degree cycle, with exception for Russia scored with one and Slovenia and Germany that have, according to the 2009 Bologna Stocktaking Report between 25% and 49% of all students enrolled in the two-cycle degree system. As Croatia is concerned, the score of 4 indicates a high 75.8% of students enrolled in the two-cycle degree system.

**Table 6: Number of countries per priority action line indicators and score**

INDICATOR	SCORE				
	5	4	3	2	1
<b>DEGREE SYSTEM</b>					
1. Stage of implementing the first and second cycle	31	10	3	3	1
2. Access to the next cycle	42	2	4	0	0
3. Implementation of national qualifications framework	6	6	21	6	9
<b>QUALITY ASSURANCE</b>					
4. Stage of development of external quality assurance system	16	17	14	1	0
5. Level of student participation	19	16	7	4	2
6. Level of international participation	16	12	4	14	2
<b>RECOGNITION OF DEGREES AND STUDY PERIODS</b>					
7. Stage of implementation of diploma supplement	26	9	11	0	2
8. Implementation of the principles of the Lisbon Recognition Convention	35	2	5	1	5
9. Stage of implementation of ECTS	21	18	7	2	0
10. Recognition of prior learning	19	4	9	10	6

Based on The 2009 Bologna Stocktaking Report

The best results were achieved in the implementation of the Lisbon Recognition Convention principles, indicating a very good compliance of national legislation with the Lisbon Recognition Convention in 35 countries. Croatia is among those 35 high scored countries. Croatia signed the Lisbon Recognition Convention in 1999 and ratified it in 2002. According to 2009 Bologna Stocktaking Report, countries like Belgium, (both the Flemish and the French Community), Greece, Italy and Spain, did not ratify the Lisbon Recognition Convention.

Although, absolutely the best results according to the number of countries were achieved in the implementing of the Lisbon Recognition Convention, the best average score, a high 4.79 is given to the access to the next cycle indicator, as many as 42 countries completely fulfilled the requirement (see Table 6). Croatia is scored 3 together with Albania, the Holy See and the FYROM. The 2009 Bologna National Report for Croatia states that all first cycle qualifications give access to the second cycle and 15% of the qualifications of the second cycle do not give access to the third cycle.

**Table 7: Overall average Bologna signatory countries score per priority action line indicator**

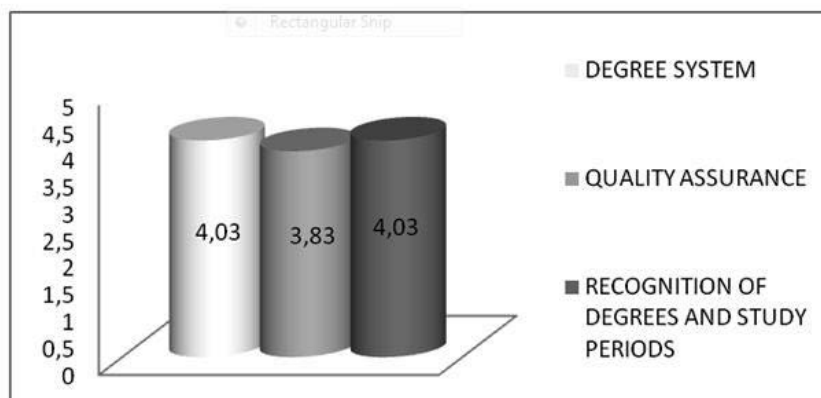
ACTION LINE	AVERAGE SCORE
<b>DEGREE SYSTEM</b>	<b>4.03</b>
1. Stage of implementing the first and second cycle	4.39
2. Access to the next cycle	4.79
3. Implementation of national qualifications framework	2.88
<b>QUALITY ASSURANCE</b>	<b>3.83</b>
4. Stage of development of external quality assurance system	4
5. Level of student participation	4
6. Level of international participation	3.54
<b>RECOGNITION OF DEGREES AND STUDY PERIODS</b>	<b>4.03</b>
7. Stage of implementation of diploma supplement	4.19
8. Implementation of the principles of the Lisbon Recognition Convention	4.27
9. Stage of implementation of ECTS	4.21
10. Recognition of prior learning	3.42
Overall average score (all indicators and all countries)	<b>3.97</b>

Based on: The 2009 Bologna Stocktaking Report

The requirements regarding the degree system and recognition of prior learning were met by most

countries and gained an average score of respectively 4.03.

**Figure 2: Average score of the priority action lines fulfilment**



Source: Table 7



Generally, the requirements regarding the quality assurance system were scored gained an average score of 3.83.

Within the group of countries that signed the Bologna Declaration in 2001 with Croatia, i.e. Cyprus, Liechtenstein and Turkey, Croatia achieved the best results and is number 24 in the total countries ranking with a score of 4. In the total of 10 criteria divided into 3 priority action lines, Croatia gained the highest score in the fulfilment of 4 criterions, i.e. level of students' participations, level of international participation, implementation of the Lisbon Recognition Convention principle and stage of implementation of ECTS. The lowest score was given to the fulfilment of the following criteria: access to the next cycle, implementation of national qualification framework, stage of implementation of diploma supplement and recognition of prior learning. The first steps towards the Croatian higher education euro integration were made in year 2003 when the Act on Scientific Activity and Higher Education, with all its further amendments, became law and set the legislative basis and preconditions for further readjustments. The creation of the new institutional and legislative framework for the Bologna Process implementation set the basis for further accomplishments of goals and objectives mentioned in the Bologna Declaration.

According to the National Country Report 2005-2007 for Croatia, in year 2005 the most demanding Bologna priority has been fulfilled. More than 800 study programmes were evaluated, redesigned and harmonized according to the Bologna Process principles. In the academic year 2005/06 the three main cycles were formally introduced and enrolment in the pre-Bologna programmes were no longer possible. By aligning undergraduate, graduate, post-graduate and professional study programmes and adopting the three levels Bachelor-Master-Doctor system, Croatia laid the corner stone for further successful integration in the European Higher Education Area. Thereafter, Croatian higher education has been continuously rethought and readjusted.

In fact, the EU/CoE/UNESCO Diploma Supplement format was introduced in the Croatian higher education system in 2005. As of 2007 all the students graduation from the Bologna programmes receive the Diploma Supplement automatically and free of charge and both in Croatian and English. Students

from the pre-Bologna programmes do not receive the Diploma Supplement automatically.

Furthermore, a new methodology for foreign higher education qualifications recognition was adopted. The development of the national qualifications framework began in 2006 and in 2007 the Croatian Government adopted the guidelines for the Croatian Qualifications Framework (The CROQF) in compatibility with the adapted Framework of Qualifications for the European Higher Education Area. Since then significant progress has made but the national qualifications framework is still in development and it is foreseen that it will be active till 2012. With the purpose of enhancing students' and teachers mobility in 2007 the Agency for Mobility and EU Programmes was established. Noteworthy, is the data that between 0.1% and 2.5% of the total higher budget is dedicated for specific lifelong learning activities.

To enhance the role of academia in economic and social development, the Croatian Government has established in 2006 the Agency for Adult Education /2/. In year 2004 the Agency for Science and Higher Education was established with the mission of supporting quality improvement of science and higher education. The external quality assurance system is operating at national level and it covers all Croatian higher education institutions. In the student's participation and in the international participation Croatia made significant progresses.

## THE NEW EUROPEAN FRAMEWORK OF CROATIA'S HIGHER EDUCATION SYSTEM

Croatia signed the Bologna Declaration in 2001 at the Ministerial Conference in Prague and so took on the obligation to harmonise its higher education system with the Declaration's requirements by 2010. Since signing the Bologna Declaration the Croatian higher education system changed and developed significantly.

Today, the higher education system in Croatia is basically a binary system and higher education is performed through university and professional studies. University studies are performed at universities while professional studies are performed at polytechnics and school of professional higher education. Consequently, there are two types of degree courses in Croatia: university degree courses and professional degree courses.

University courses are performed through three levels: undergraduate, graduate and postgraduate study, while professional courses are performed through two levels: professional and specialist graduate courses. Currently, there are 130 higher education institutions in the Republic of Croatia. There are three types of educational institutions that provide higher education: universities, poly-

technics and schools of professional higher education with all its constituents. Currently in Croatia there are 7 universities with all its constituents (faculties and departments), 16 polytechnics (13 public and 3 private) and 28 schools of professional higher education (25 public and 3 private). The list of all institutions that provide higher education in Croatia is given in the table below

**Table 8: Higher education institutions in Croatia**

TYPE OF HIGHER EDUCATION INSTITUTION	INSTITUTION'S NAME		NUMBER OF INSTITUTIONS
UNIVERSITIES	<ul style="list-style-type: none"> <li>– University of Dubrovnik with 7 University departments,</li> <li>– Josip Juraj Strossmayer University in Osijek with 17 faculties,</li> <li>– Rijeka University with 10 faculties,</li> <li>– Split University with 15 faculties,</li> <li>– Zadar University of 23 University departments,</li> <li>– Zagreb University with 34 faculties, and</li> <li>– Juraj Dobrila University in Pula with 2 university departments.</li> </ul>		7
POLYTECHNICS	PUBLIC	<ul style="list-style-type: none"> <li>– Social Studies Polytechnic in Zagreb,</li> <li>– Technical Polytechnic in Zagreb,</li> <li>– Polytechnic in Karlovac,</li> <li>– Lavoslav Ružička Polytechnic in Vukovar,</li> <li>– Nikola Tesla Polytechnic in Gospić,</li> <li>– Marko Marulić Polytechnic in Knin,</li> <li>– Polytechnic in Požega,</li> <li>– Polytechnic in Rijeka,</li> <li>– Polytechnic in Varaždin,</li> <li>– Polytechnic in Slavonski Brod,</li> <li>– Polytechnic in Šibenik,</li> <li>– Health Studies Polytechnic in Zagreb, and</li> <li>– Medimurje University of Applied Sciences in Čakovec.</li> </ul>	13
	PRIVATE	<ul style="list-style-type: none"> <li>– Polytechnic in Velika Gorica,</li> <li>– VERN Business College,</li> <li>– Polytechnic for media, business and management,</li> </ul>	3
SCHOOLS OF PROFESSIONAL HIGHER EDUCATION	PUBLIC	<ul style="list-style-type: none"> <li>– Police Academy in Zagreb,</li> <li>– College of Agriculture in Križevci, and</li> <li>– College of Management in Tourism and IT in Virovitica.</li> </ul>	3

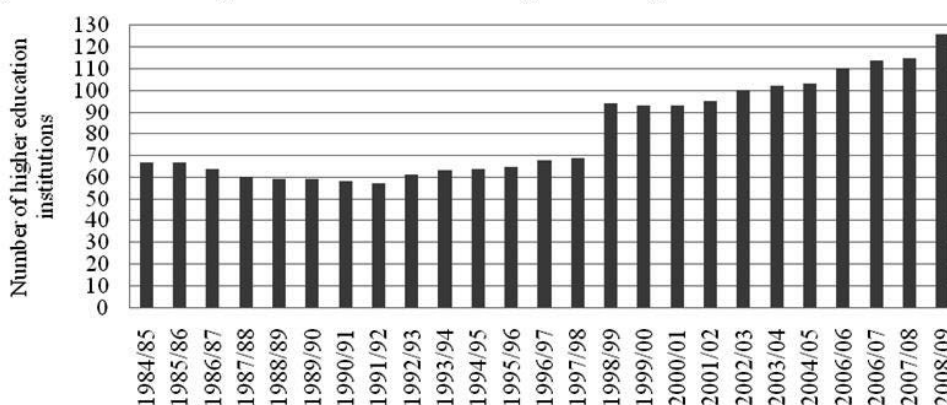
	PRIVATE	<ul style="list-style-type: none"> <li>- American College of Management and Technology,</li> <li>- International Graduate School for Management in Zagreb,</li> <li>- RRiF School of Financial Management,</li> <li>- Matija Vlačić Ilirik Theological College,</li> <li>- Evangelical Theological Seminary in Osijek,</li> <li>- Libertas Business School,</li> <li>- Manero College,</li> <li>- Utilus Business School in Zagreb,</li> <li>- Agora School of Professional Higher Education in Zagreb,</li> <li>- Minerva Business School in Dugopolje,</li> <li>- Zagreb Business School,</li> <li>- School of Information Technologies in Zagreb,</li> <li>- Baltazar Adam Krčelić Business and Management School in Zaprešić,</li> <li>- School for Workplace Safety in Zagreb,</li> <li>- Polytechnic School in Pula,</li> <li>- Zagreb School of Economics and Management,</li> <li>- Zagreb School of Management, Polytechnic School in Bjelovar, School of Information Technologies,</li> <li>- Minerva Business School,</li> <li>- School of Journalism,</li> <li>- Hrvatsko zagorje School of Professional Higher Education in Krapina,</li> <li>- Polytechnic School in Zagreb,</li> <li>- TV-AKADEMIJA School of Multimedia Communication Technologies,</li> <li>- School of Applied Informatics,</li> <li>- Zrinski School of Economy, Entrepreneurship and Management, and</li> <li>- Kairos School of Public Relation and Media Study.</li> </ul>	25
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Based on: The Ministry of Science, Education and Sports of the Republic of Croatia: [www.mzoš.hr](http://www.mzoš.hr)

The two last decades were characterised by a growth in number of higher education institutions, especially polytechnics and school of professional higher education. The changes in the total number

of higher education institutions from the academic year 1984/85 to 2008/09 are shown in the following figure.

**Figure 3: Number of higher education institutions by academic year 1984/85 to 2008/09 in**

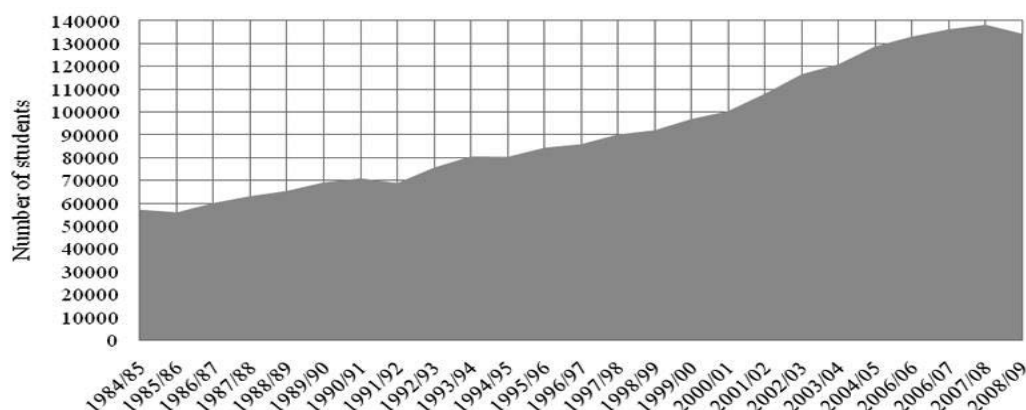


Source: Statistical Yearbook 2009.

The budget of the Ministry of Science, Education and Sport has increased considerably since 2003 and 6907 new jobs have been opened in the science and education sector /3/. Similarly, to the number of institutions, the number of students in tertiary

education too shows a growing tendency. The chronological evolution of the total number of students since the academic year 1984/85 to 2008/09, in tertiary education (ISCED 5) is shown in the figure below.

**Figure 4: Number of students in tertiary education by academic year from 1984/85 to 2008/09 in**



Source: Statistical Yearbook 2009.

The data show that the number of students was growing in the analysed period at an average rate of 3.62% per year. According to data published by the Croatian Agency for Science and Higher Education, a total of 1242 accredited study programmes, within

8 scientific areas, are currently performed in the listed Croatian higher education institutions. Table 9 gives a detailed overview of the single university and professional studies according to the scientific area currently performed at Croatian higher education institutions.

Table 9: Distribution of University and Professional programme studies according to scientific areas

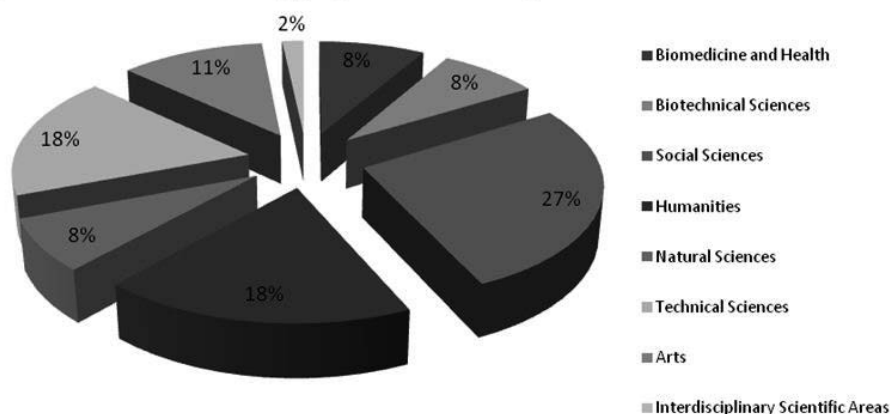
Scientific Areas	University Studies										Total University Studies	Professional Studies			Total Professional Studies	TOTAL				
	Undergraduate Studies					Graduate Studies						Undergraduate Study	Graduate Study							
	Undergraduate Studies		Integrated Undergraduate Studies		Graduate Studies		Specialist Postgraduate Studies		Doctoral Postgraduate Studies											
		%		%		%		%		%		%		%		%				
Biomedicine and Health	3	0.87	12	28.57	3	0.82	52	29.21	8	7.84	78	7.54	20	12.42	6	13.04	26	12.56	104	8.37
Biotechnical Sciences	20	5.80	0	0.00	33	8.97	18	10.11	9	8.82	80	7.73	16	9.94	2	4.35	18	8.70	98	7.89
Social Sciences	65	18.84	15	35.71	67	18.21	79	44.38	20	19.61	246	23.77	64	39.75	25	54.35	89	43.00	335	26.97
Humanities	99	28.70	4	9.52	99	26.90	3	1.69	23	22.55	228	22.03	1	0.62	0	0.00	1	0.48	229	18.44
Natural Sciences	27	7.83	8	19.05	41	11.14	4	2.25	13	12.75	93	8.99	0	0.00	0	0.00	0	0.00	93	7.49
Technical Sciences	59	17.10	0	0.00	55	14.95	15	8.43	21	20.59	150	14.49	57	35.40	13	28.26	70	33.82	220	17.71
Arts	67	19.42	2	4.76	62	16.85	4	2.25	4	3.92	139	13.43	3	1.86	0	0.00	3	1.45	142	11.43
Interdisciplinary Scientific Areas	5	1.45	1	2.38	8	2.17	3	1.69	4	3.92	21	2.03	0	0.00	0	0.00	0	0.00	21	1.69
Total	345	100	42	100	368	100	178	100	102	100	1035	100.00	161	100	46	100	207	100.00	1242	100.00

Sources: Adapted from: Croatian Agency for Science and Higher Education: [www.mozvag.srce.hr](http://www.mozvag.srce.hr) and Ministry of Education, Science and Sports of the Republic of Croatia: [www.mzos.hr](http://www.mzos.hr)

Figure 5 gives the distributions of study programmes according to scientific area, currently per-

formed in Croatia's higher institution.

**Figure 5: Distribution of study programmes according to scientific areas**



Source: Table 9

Figure 5 shows that the Social Sciences are the most represented, with a total of 335 different study programmes currently performed.

The mentioned study programmes are offered at all higher education institutions types and cover the whole three sequential Bachelor-Master-Doctor cycles system. All currently performing study programmes, as well as recently newly proposed ones have been harmonized with Bologna principles.

## DISCUSSION

As many authors and experts emphasised, education and research are the most propulsive development factors for Croatia. By signing the Bologna Declaration in year 2001, Croatia entered a period of intensive and systematic reforms of its higher education system. The aim of the Bologna Process is to help Europe become the most advanced knowledge-based society. The creation of a common European Higher Education Area should assure greater mobility and employability of European Union's citizens and higher education systems should become more compatible and qualifications more transparent and portable [4]. The convergence towards the European Higher Education Area involves profound change within the university sector]. Until 2001 significant progress has been made, but there are still requirements to fulfil and readjustments to be done in further har-

monisation and integration of Croatia's higher education system.

In view of the complexity and extensiveness of the issues discussed the paper presents just the basic notions and findings. Undoubtedly, the issue of the Bologna Process reforms, due to their relevance and impact on the entire European higher education system, requires a more detailed and systematic analysis. In the 2009 Bologna Stocktaking Reports, as short term challenges, the further structural reform of the universities, the building of strong higher education information and analysis system and the strengthening of the importance of the quality assurance agency are mentioned. Besides those, the Report emphasises among the long term challenges the strengthening of the role of students in the reform processes, the implementing of a learning outcome approach and the certification of the Croatian Qualifications Framework [The 2009 Bologna Stocktaking Report]. A particular attention should be dedicated to the activity of definition the learning outcomes. As known the European Qualifications Framework uses the tripartite set to categorize the learning outcomes, namely, knowledge, competences and skills [5]. Curriculum in Croatian higher institution should be designed in order to assure the acquisition of needed knowledge, competences and skill that allow a fast and successful transition from school to labour market. In designing study pro-

grammes and curricula particular emphasis should be given to the relationship between higher education institutions and practice. Higher education should be more market oriented and more sensitive to market needs and tendencies. Furthermore the issue of increasing the competitiveness, both at national and international level, of Croatian educational system should be addressed more carefully. More attentions should be given to stimulating national and international research projects and to the endeavour of reducing or eliminating the negative brain-drain process. Despite the significant progresses and the radical Croatian higher educational system reform, further improvement in quality, in ensuring access to higher education and in stimulating of mobility for students and staff should be made in order to ensure the proper functioning of the European Higher Education Area and the internationalization of the whole Croatian higher educational system.

#### Notes

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